APPENDIX E:

Measurement and Sampling of the

(b) (6) Domestic Well

Hydro Logic, Inc.
1002 W. Franklin Street, Boise, ID 83702 (208) 342-8369, Fax (208) 342-3100, hli@hydrologicinc.net

May 20, 2014

Mike McMennamy
Alta Mesa Services, LP
Alta Mesa Holdings, GP, LLC
15021 Katy Freeway #400, Houston, TX 77094
(713) 304-2954
mmcmennamy@AltaMesa.net

REGISTERED PROFESSIONAL GEOLOGIST
EDWARD SQUIRES
5-20-2014
STATE OF IDAHO

Subject: Measurement and Sampling of the (b) (6) Domestic Well

Dear Mike;

Project Purpose:
Alta Mesa Holdings, LP (AM) contacted Hydro Logic, Inc. (HLI) to conduct water level measurements and ground water geochemistry sampling of the (b) (6) (b) (6) domestic well at (b) (6) (Figures 1 and 2). The purpose of the monitoring is to provide quality baseline hydrogeological and geochemical data to domestic well owners near the proposed AM natural gas wells in the Payette River valley. Most domestic wells are not sampled for major ions and other constituents dissolved in the natural ground water, nor is the typical domestic well pumped according to professional standards for hydraulic testing to determine its productive yield and sustainability. HLI performed both on the (b) (6) Well.

Field Work:
After an initial contact by Ed Squires, and the signing of a liability waiver/well questionnaire by (b) (6) (Appendix A), Kurt Newbry of HLI scheduled a site visit for the purposes of the aforementioned monitoring and sampling on April 16, 2014. Kurt met with (b) (6) on site (Figure 3) and manipulated the (b) (6) water system to conduct a constant-rate draw down test of the well for 60 minutes of pumping. The field-recorded hand water-level measurements are attached as Appendix B and those same measurements are tabulated on Table 1. A semi-logarithmic plot of the measured pumping water levels versus the logarithm of time are presented on Figure 4.

Kurt also obtained field-measured geochemical parameters during 49 minutes of additional pumping, after the pumping test (at a slightly lesser discharge rate), and prior to sampling after the field-measured geochemistry parameters had stabilized. Near the end of the total 100 minutes of pumping, water samples were obtained from the well and transported to Analytical Laboratories, Inc. in Boise, Idaho for analysis (Appendix C and Table 2). All chain of custody, filtering, and preservation protocols were observed and the samples were analyzed for a suite of analytes recommended by the Idaho Department of Environmental Quality and transmitted to HLI by AM.

Details of Construction for the (b) (6) Domestic Well:
The (b) (6) domestic well was drilled in May of 1997, originally for (b) (6) by Haines Water Well Drilling of New Plymouth, ID (Figure 5 and Appendix D) to a total

depth of 185 feet below ground level (bgl). A six-inch diameter surface casing extends from 139 feet bgl to 1½ feet above land surface. The well is completed as an open borehole from the bottom of the casing to the completed depth resulting in the well being open to, and drawing ground water from, the saturated geologic section from 139-to-185 feet bgl (and possibly from the unsealed upper section below the annular seal 20-to-139 feet bgl). The aquifer drawn upon by this well is comprised of alternating layers of blue-colored claystone and siltstone, and black/white-colored sandstone serving as the water-bearing units as recorded by the well driller (Appendix D). Non pumping water level in the well, measured by the driller in 1997, is recorded as 89 feet bgl; approximately 5 feet higher than to the non-pumping ("static") water level of 94.17 feet bgl measured by HLI on April 16, 2014 at the same time of year. The surface well seal consists of an unspecified "bentonite" of some form (whether a chip, granular, or slurry type was used is unknown) to fill the annular space between a 10-inch cable-tool-drilled bore and the 6-inch steel surface casing to 20 feet bgl. The well test data recorded by the driller states that the well was pumped at 20 gallons per minute (gpm) with a drawdown of 3 feet after 4 hours.

We obtained the Well Driller's Report for the (b) (6) domestic well and provide that log here for your file and use (Appendix D). HLI also developed a cross-sectional sketch of the information from that report (Figure 5).

Hydrogeologic Conclusions:

The (b) (6) domestic well is fairly productive compared to the typical domestic well in Idaho and this is especially so given its completion interval in low-permeability silts and clays. We found the well to have a 60-minute specific capacity of 0.56 gpm/ft of drawdown after pumping the well at 10 gpm for an hour with 17.71 feet of drawdown (Figure 4, Table 1). The well draws down according to predictable hydrogeologic theory with no apparent effects from sub-surface hydraulic boundaries (Figure 4) during the short 60-minute pumping period. As equipped, the well is capable of producing approximately 10 gpm of sand-free ground water at 65.5°F. With the bottom of the casing being located 139 feet bgl and projecting the drawdown using a ΔS (drawdown per log cycle) of -3.9 feet per log cycle (Figure 4), this well could theoretically be pumped continuously without interruption at 10 gpm for two years while only drawing the water level down to 10 feet above the bottom of the pump chamber casing. The non-pumping water level measured in the well by Hydro Logic, Inc. is approximately 5 feet deeper than that reported by the well driller over 17 years ago suggesting significant water level decline has not occurred. According to the pumping test reported by the driller of the well, the original specific capacity would have been much higher at about 7 gpm/foot of drawdown.

Ground Water Geochemistry Conclusions:

The ground water from the (b) (6) well is a calcium-magnesium-bicarbonate water chemistry type. The geochemistry results show that the sampled ground water is suitable for all potable purposes with no regulated constituents in excess of the USEPA Safe Drinking Water Act or the Idaho Department of Environmental Quality's Administrative Rules for Public Drinking Water Systems.

Field parameters were measured as the samples were collected. The ground water temperature of 65.5 degrees Fahrenheit (18.6 degrees Celsius) indicates that this is shallow alluvial ground water. The slightly cooler water temperature of 60 degrees F reported by the driller in 1997 is most likely caused by his sampling method using a pump and cooler ambient temperatures or sampling/instrument error because it is unlikely the ground water warmed up over this period. The specific (electrical) conductance is a relatively low 607 microSiemens per centimeter reflecting the dilute total dissolved solids (TDS) of 364 milligrams per Liter (mg/L) reported by the laboratory. The pH is a slightly to moderately alkaline 7.73. Dissolved oxygen (DO) was 0.09 mg/L indicating that the ground water is nearly anoxic; essentially containing no dissolved oxygen. The equilibrium DO concentration for water with this temperature is 9.5 mg/L. Therefore, as much as 99 percent of the saturated DO was consumed along the ground water flow path to this well location by chemical reactions with the sediments and its microbial population.

The ground water contains a relatively low iron concentration of 0.07 mg/L and manganese concentration of 0.05 mg/L reflecting the low Eh (reduction-oxidation potential) of the ground water. The combination of this low iron, sulfate and very minor hydrogen sulfide odor indicates that the sediments contain a minor but oxidizing amount of pyrite (iron sulfate). Arsenic, selenium, and boron are all less than their respective low detection limits. Barium, on the other hand is reported to be present at a low concentration of 0.11 mg/L. There are no parameters exceeding their respective drinking water standards of the USEPA Safe Drinking Water Act.

Both calcium and magnesium individually represent 33 percent of the cations followed by sodium at a relatively low 30 percent. Bicarbonate represents 75 percent of the anions followed by sulfate at 21 percent and chloride at only 4 percent. It reportedly contains an high silica concentration of 69.2 mg/L comprising 19 percent of the TDS. This indicates that the sediments probably contain tuffaceous sediments (such as volcanic ashes) that are relatively easily dissolved in this ground water.

Happily for the (b) (6) family, both the total coliform and E-Coli coliform bacteria are absent in their well water. This good quality ground water could be aesthetically improved for taste by simple aeration.

The uranium concentration is less than its detection limit of 1 microgram per Liter (µg/L). The gross alpha is similarly quite low at less than its detection limit of 3 picoCuries per Liter (pCi/L). These relationships indicate that the uranium content of the sediments is and has always been very low. The gross beta activity of 7.3 pCi/L likely reflects a trace amount of thorium present in these fine-grained aquifer sediments. Dissolved radionuclides are not a health concern in this ground water.

Geochemical modeling of the ground water was performed using The Geochemist's Workbench software. This software compares the ground water chemistry with about 6,500 minerals and compounds to estimate those that will tend to be dissolved

(undersaturated), those that will tend to be precipitated (supersaturated) and those that are in equilibrium. Calcite (calcium-carbonate) and iron oxyhydroxide are slightly supersaturated indicating a slight tendency for precipitation. The minerals that are in equilibrium are usually those that control most of the ground water chemistry. This ground water is estimated to be in equilibrium with respect to dolomite (calcium-magnesium carbonate), sepiolite (magnesium-silicate) and amorphous silica. These results support the above suggestion that this ground water is associated with tuffaceous sediment and the tuffaceous sediment is probably basaltic in composition.
Both the iron and manganese concentrations are essentially dissolved. Modeling estimates that only about 0.3 mg/L of the total iron is in a colloidal state in the natural ground water produced by the well.

The modeling also estimates the amount of dissolved carbon dioxide that is slightly elevated at 10 mg/L. A typical shallow alluvial aquifer with this water chemistry type commonly contains between about 2 and 5 mg/L carbon dioxide. This ground water clearly exceeds this more typical range probably reflecting chemical reactions with the tuffaceous sediments. The chemical reaction promotes a higher alkalinity and therefore a higher carbon dioxide concentration.

Aesthetically, the ground water carries a minor smell of hydrogen sulfide (H_2S or "rotten egg") but not unusual for this chemically reduced hydrogeologic setting containing abundant organic material and buried (in the sediments) tree wood. Again, simple aeration would likely improve taste and smell allowing the H_2S to volatize and escape.

Only very minor entrained gas was observed in the pumped well water. The volatile organic compound methane was detected at the laboratory but at very low concentrations near its physical detection limits. The very low methane concentration of 0.0041 mg/L is well above the detection limit of 0.0004 mg/L but significantly below the methane solubility of 28 mg/L at atmospheric conditions. Dissolved methane does not have an odor, taste, or color and does not affect the potability of a water for culinary purposes. The primary regulatory concern involves concentrations above its solubility in ground water at which point the methane gas can accumulate in closed spaces to concentrations where it can become explosive. The methane concentration in this ground water is three-plus orders of magnitude lower than the No Immediate Action Recommended Action Level for methane of less than 10 mg/L (GPC). Furthermore it is two orders of magnitude less than the Pennsylvania Department of Environmental Protection No Apparent Threat lower limit of 0.5 mg/L. Methane commonly occurs in ground water on a worldwide basis but ground water samples are rarely analyzed for methane.

Methane in these aquifers is produced by anaerobic methanogenic bacteria utilizing natural Total Organic carbon (TOC) sources within adjacent clays sequentially utilizing dissolved oxygen, nitrate, manganese, iron and sulfate as electron acceptors to oxidize organic matter (*Darling and Gooddy, 2005, The hydrochemistry of methane: evidence from English groundwaters: Chemical Geology, Vol. 229, No. 4, pp 293-312*). This process leads to the consumption of dissolved oxygen of less than 0.1 mg/L; conversion of nitrate to ammonia and organic nitrogen; dissolved manganese and iron; and

production of both carbon dioxide and hydrogen sulfide gases. These characteristics also occur in the ground water from the (b) (6) Well. Methanogens require reducing conditions with an Eh at least as low as a minus 150-to-200 mV range to produce methane, therefore the methane is likely being generated within the series of blue claystones adjacent to the siltstones and sandstones that form the aquifer sediments at this location. Very low levels of methane likely diffusively seep from the clays and claystones into the native ground water.

Biogenic methane is commonly present in shallow ground waters in mg/L concentrations where abundant organic matter is present. The amount of methane generated is directly related to the amount of organic matter present in the subsurface. Such sources include layers of wood and organic fiber, organic-rich lake sediments, peat beds, landfills, lignite and coal beds. These characteristics are present in the aquifer matrix containing the ground water produced from the (b) (6) Well.

Deliverable Products:
As deliverables, we transmit the following documents:

1) An annotated topographic series map of the (b) (6) domestic well location.
2) An annotated aerial photograph of the (b) (6) domestic well location.
3) A copy of the indemnification/well questionnaire form signed by (b) (6)
4) Well Driller's Report for the (b) (6) domestic well (originally (b) (6)).
5) A cross-sectional sketch of the details of well construction of the (b) (6) well.
6) Constant-rate water-level draw down test measurements from the well.
7) A semi-logarithmic draw down versus the log of time plot of the measurements.
8) Field notes/measurements by K. Newbry (HLI) when on site with (b) (6)
9) Analytical results for (b) (6) ground water by Analytical Laboratories, Boise, ID.
10) A 4-frame photo mosaic of the (b) (6) well head at time of testing/sampling.
11) An electronic (pdf-format) file containing all of the above in digital form.
12) This project completion and transmittal letter.

Upshot:
The obtained information is helpful and protective to/of both parties going forward in knowing the circumstances of the (b) (6) domestic well ground water. The (b) (6) family will be pleased to know with certainty that their well water is safe to drink and their well productive. (b) (6) were very helpful and accommodating to our measurements. HLI's understanding is that Alta Mesa will follow up with the (b) (6) unless you would prefer that HLI do that.

Thank you for asking Hydro Logic, Inc. to assist Alta-Mesa with its water resource investigations.

Respectfully,
Ed Squires

FIGURES

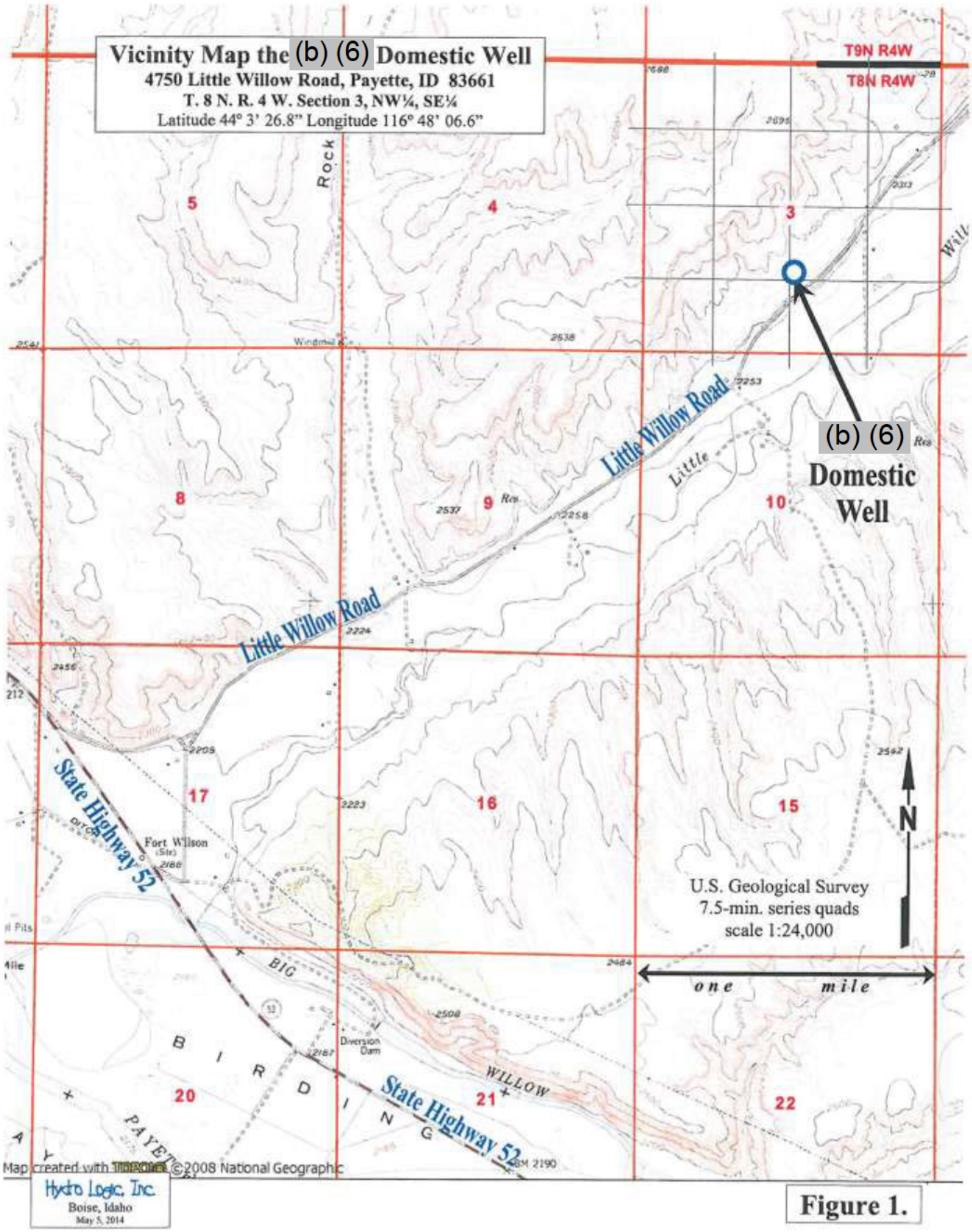
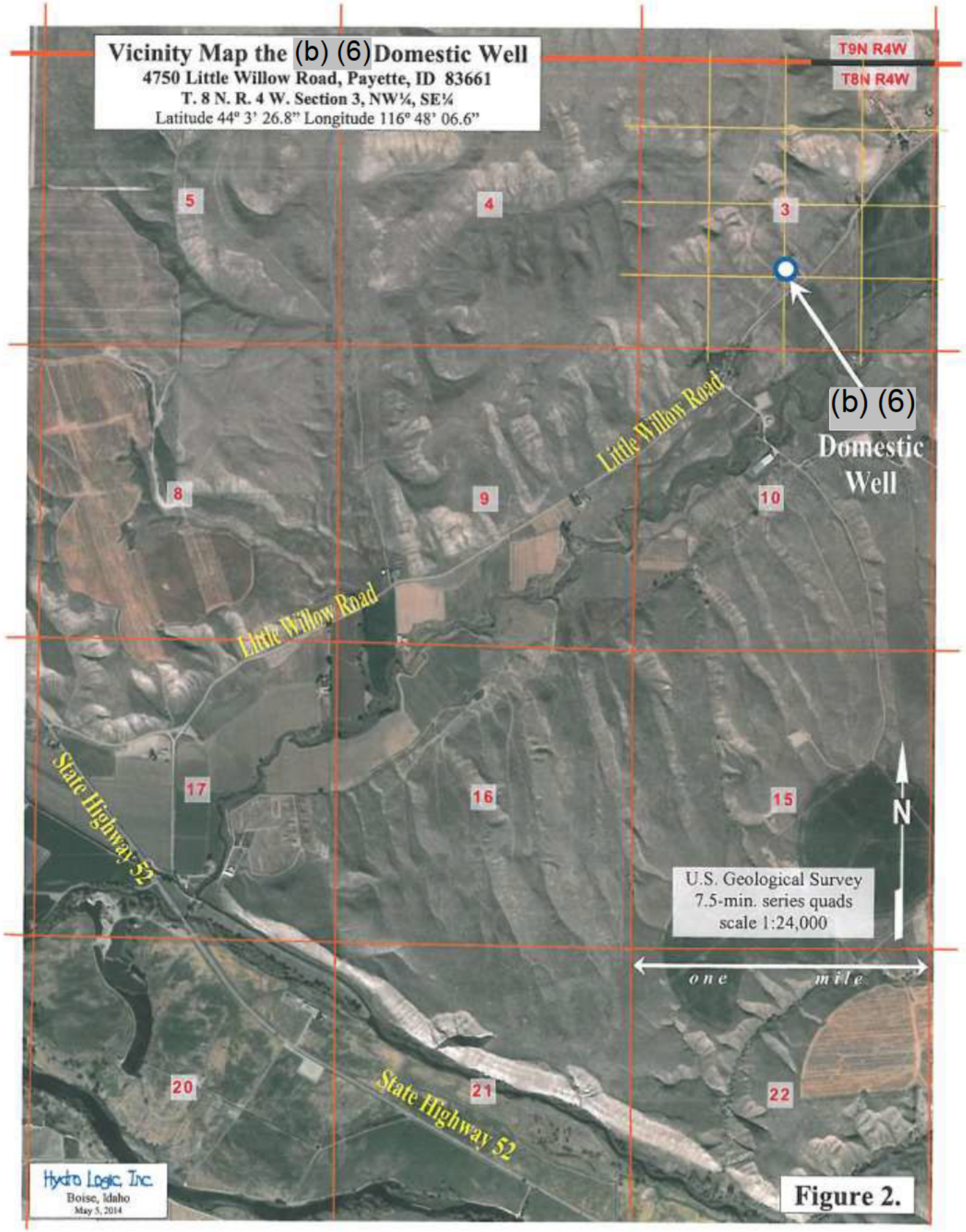

Vicinity Map the (b) (6) Domestic Well
4750 Little Willow Road, Payette, ID 83661
T. 8 N. R. 4 W. Section 3, NW¼, SE¼
Latitude 44° 3' 26.8" Longitude 116° 48' 06.6"
T9N R4W
T8N R4W
(b) (6)
Domestic Well
Little Willow Road
Little Willow Road
State Highway 52
State Highway 52
Fort Wilson (Site)
BIG
WILLOW
BIRDING
PAYETTE
Diversion Dam
U.S. Geological Survey
7.5-min. series quads
scale 1:24,000
one mile
N
Map created with TOPO! ©2008 National Geographic
Hydro Logic, Inc.
Boise, Idaho
May 5, 2014

Figure 1.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T. 8 N. R. 4 W. Section 3, NW¼, SE¼
Latitude 44° 3' 26.8" Longitude 116° 48' 06.6"
T9N R4W
T8N R4W
5
4
3
(b) (6)
Domestic Well
Little Willow Road
8
9
10
Little Willow Road
State Highway 52
17
16
15
N
U.S. Geological Survey
7.5-min. series quads
scale 1:24,000
one mile
20
21
22
State Highway 52
Hydro Logic, Inc.
Boise, Idaho
May 5, 2014
Figure 2.

Hydro Logic, Inc.
Boise, Idaho

April 16, 2014 photograph looks northeast at the (b) (6) 6-inch domestic well showing the (b) (6) residence in the background. The well site has good drainage and the well casing height of 1.65 feet above land surface is satisfies the legal "stick-up" for a well in Idaho.

April 16, 2014 photograph looking south across the Little Willow Creek valley with the proposed location for an Alta Mesa Holdings gas well in the center background approximately ½-to-¾ mile away and (b) (6) domestic well in foreground..

April 16, 2014 south facing photograph showing the frost free hydrant used for the constant discharge test and sampling of the (b) (6) 6-inch domestic well with the (b) (6) residence in the background.

April 16, 2014 photograph depicts the well head configuration at the (b) (6) well as its ground water was sampled for a comprehensive suite of analytes. In this south looking photograph, one can see the 10 gallons/minute flow during the well test. Sampling was from a closed cell system prior to the discharge seen here.

Figure 3.

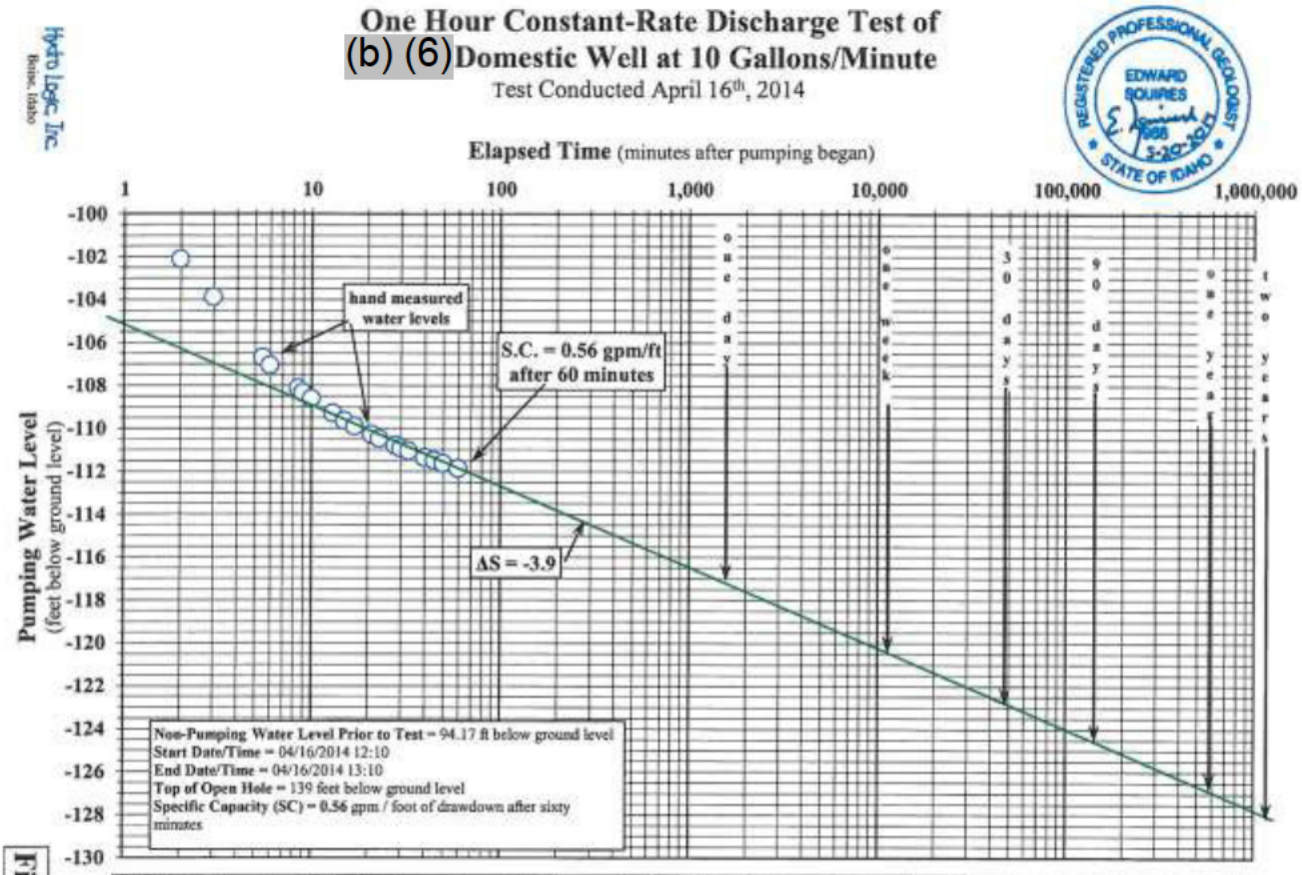


Figure 4.

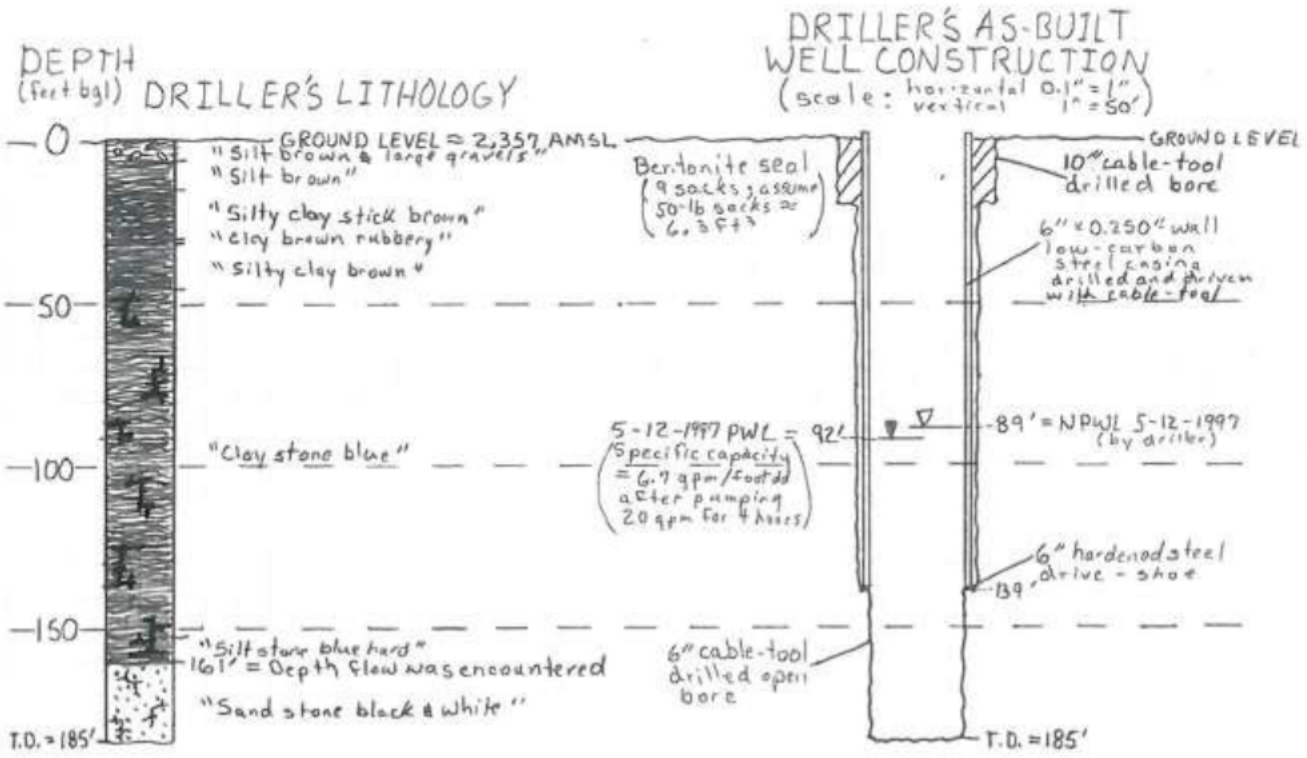
Figure 4. - Semi-logarithmic plot of pumping water level versus the log of time for the constant-rate discharge hydraulic test of the (b) (6) domestic well at 10 gallons per minute for 60 minutes on March 16, 2014. The water level in the (b) (6) well draws down according to a predictable relationship as shown by the projected green line. The well has a relatively high specific capacity for a domestic well, with ample available drawdown.

Hydro Logic, Inc. | CALCULATIONS AND DESIGN DATA | PREPARED BY: L. Pearson

SUBJECT: (b) (6) Domestic Well – Cross-Sectional Sketch | DATE: 5-20-2014

Well Location: T. 8 N. R. 4 W., Section 3, SW¼, NW¼, SE¼ | SHEET 1 OF 1

GPS: Latitude 44° 3' 26.8" North, Longitude 116° 48' 6.6" West



- Water temperature was 60° F according to Driller.
- Bottom hole temperature was 60° F according to Driller.
- Driller said water quality was "OK, some odor".
- Drive-shoe seal was tested with a water head over a 12-hour period

- Well constructed May 12, 1997 by Haines Water Well Drilling New Plymouth, ID.
- Non-pumping water level (NPWL) was 89 feet below ground in May 1997.
- Pumping water level (PWL) was 92 feet below ground in May 1997 after pumping at 20 gallons/minute for approximately 4-hours
- Specific capacity of the well is 6.7 gallons/minute/foot after pumping at 20 gallons/minute for 4-hours plus
- Information shown is from Well Driller's Report on file at the Idaho Department of Water Resources. (Note: Original owner on the Driller's Report is (b) (6))

REGISTERED PROFESSIONAL GEOLOGIST
EDWARD SQUIRES
1968
5-20-2014
STATE OF IDAHO

Hydro Logic, Inc.
Boise, Idaho
May 20, 2014

Figure 5.

TABLES

Alta Mesa Holdings

(b) (6) Well Constant Discharge Test Data - 10 Gallons / Minute for 60 Minutes

Testing Conducted April 16th, 2014

Date/Time (24 hour)	Elapsed Time (minutes)	Water Level (feet below measure point = 1.65' above ground)	Water Level (feet below ground)	Drawdown (feet)	Flow (gpm)	Comments
04/16/2014 12:07	-	95.82	94.17	0.00	0.00	non-pumping water level
04/16/2014 12:10	0.0	-	-	0.00	13.60	**PUMP ON**, flow high due to pressure tank draining
04/16/2014 12:12	2.0	103.77	102.12	7.95	-	
04/16/2014 12:13	3.0	105.54	103.89	9.72	10.64	
04/16/2014 12:15	5.5	108.36	106.71	12.54	-	
04/16/2014 12:16	6.0	108.73	107.08	12.91	10.18	
04/16/2014 12:18	8.5	109.80	108.15	13.98	-	
04/16/2014 12:19	9.0	110.00	108.35	14.18	-	
04/16/2014 12:20	10.0	110.28	108.63	14.46	10.07	
04/16/2014 12:23	13.0	110.95	109.30	15.13	-	
04/16/2014 12:25	15.0	111.30	109.65	15.48	-	flow measured by timing the complete filling of a 5-gallon bucket
04/16/2014 12:27	17.0	111.57	109.92	15.75	-	
04/16/2014 12:31	21.0	111.96	110.31	16.14	10.06	
04/16/2014 12:33	23.0	112.14	110.49	16.32		
04/16/2014 12:38	28.0	112.46	110.81	16.64	10.07	
04/16/2014 12:40	30.0	112.59	110.94	16.77	-	
04/16/2014 12:43	33.0	112.72	111.07	16.90	-	
04/16/2014 12:50	40.0	113.02	111.37	17.20	9.90	
04/16/2014 12:55	45.0	113.17	111.52	17.35	10.09	
04/16/2014 13:00	50.0	113.30	111.65	17.48	9.90	
04/16/2014 13:10	60.0	113.53	111.88	17.71	10.05	**END OF TEST**, set up for water quality sampling (plumbing for water quality testing restricts flow)
04/16/2014 13:59	-	-	-	-	~9	cond. = 607 uS, pH = 7.73, T = 65.5 °F, ORP = -134.9 mV, DO = +0.09 mg/L, no sand, very minor metallic taste, very minor sulfur odor, minor degassing, no yellowing
04/16/2014 14:15	-	113.69	112.04	-	~9	
04/16/2014 14:16	-	-	-	-	-	**CLOSE VALVE / PUMP OFF**
04/16/2014 14:29	-	100.20	98.55	-	0.00	

Hydro Logic, Inc.
Boise, Idaho

Table 1.

Table 2 - Ground Water Chemistry of (b) (6) Domestic Well	
Laboratory Analyses	**Results** (in mg/L unless noted)
	Sampled at a flow rate of 10 gallons / minute
Alkalinity	280
Aluminum (total)	<0.10
Arsenic	<0.003
Barium	0.11
Boron	<0.10
Calcium	43.6
Chloride	10
Fluoride	0.28
Iron (dissolved)	0.07
Iron (total)	0.08
Magnesium	26.5
Manganese (dissolved)	0.05
Methane	0.0041
Nitrate (as N)	<0.2
Potassium	8.5
Selenium	<0.005
Silica	69.2
Sodium	46.0
Sulfate	74
Total Dissolved Solids	364
Radiology (in pCi/L unless noted)	
Gross Alpha	<3
Gross Beta	7.3 ± 3.3
Uranium pCi/L (µg/L)	<1
Adjusted Gross Alpha	NA
Field Measured (by Hydro Logic, Inc.) **Parameters**	
Field Conductivity (µS)	607
Field Dissolved Oxygen	0.09
Field Odor (describe)	very minor H_2S
Field O.R.P. (mV)	-134.9
Field pH (S.U.)	7.73
Field Sand Production (describe)	none
Field Taste (describe)	very minor metallic
Field Temperature (°F)	65.5
Field Visible Gas (describe)	minor
Samples collected by Hydro Logic, Inc. on April 16, 2014 Analyses by Analytical Laboratories, Boise, ID.	

Hydro Logic, Inc.
Boise, Idaho

Table 2.

APPENDICES

Appendix A.

Questionnaire For Domestic Well Owners with Indemnification Signed by (b) (6)

Hydro Logic, Inc.
1002 W. Franklin Street, Boise, ID 83702 (208) 342-8369, Fax (208) 342-3100, hli@hydrologicinc.net

GROUND WATER SAMPLING AND WATER LEVEL MEASUREMENTS IN DOMESTIC WELLS FOR THE ALTA MESA NATURAL GAS EXPLORATION PROJECT WITH INDEMNIFICATION

Hydro Logic, Inc. (HLI), a Boise-area hydrogeological consulting firm, has been hired by Alta-Mesa Holdings, LP of Houston, TX (Alta Mesa) to provide water level and water sampling services for domestic well owners adjacent to its natural gas exploration project near Middleton, Idaho. Alta Mesa understands and appreciates the significance of long term monitoring of water resources and has encouraged HLI to work with domestic well owners to provide high-quality measurements of water levels and ground water quality results in advance of its deep well drilling, construction, and well development projects.

As a domestic well owner who has requested Alta Mesa measure and sample your well, HLI provides the following information about our company and procedures along with a set of questions about the history and records for your well. We also provide a description of risks that can be associated with pumping, sampling, and measurement of domestic wells with a provision for indemnification of HLI and Alta Mesa for unforeseen problems that could result.

Hydro Logic, Inc.'s Credentials:

HLI is a ground water consulting firm in Boise Idaho that incorporated in 1999. HLI scientists have a cumulative fifty years of hydrogeological experience in the Treasure Valley. HLI has measured thousands of water levels in area wells and has sampled ground water quality in many hundreds more. We have worked with all water regulating agencies and have developed a reputation for quality and thoroughness for scientific investigation and reporting.

Sanitary and Sampling Protocols:

HLI personnel who would measure your well, are experienced and practice safe methods using clean sanitary equipment (well tapes) that are disinfected on-site between each measurement of different wells. All necessary sampling protocols, including appropriate preservatives, holding times, filtration, and chain-of-custody reporting, will be observed. High-quality field-measured parameter instruments are used for at-the-wellhead measurements in advance of sampling.

Risks of Measurement and Sampling:

Risk of a lodged well tape. Owing to the nature of air-rotary-drilled domestic wells and the installed submersible pumping plants, it can often be difficult to extend water level measuring tapes past the obstacles in the well to the water surface. Even if a well tape can be lowered to the water surface, it may not be able to be withdrawn if it becomes entangled in the electrical pump motor cable and pump column. If this were to happen during the measurement of your well, HLI personnel would cut the well tape at the well head and tie it off to prevent it from falling down the well. The tape, similar to an electrical lamp cord, would be secured with an attached explanatory tag until such time that the pumping plant would be removed in the future when the tape could be retrieved with the pump and discarded. It would be the responsibility of the well owner to have the cut well tape removed when the pumping plant is removed from the well in the future and to prevent the tape from falling into the well.

Risk of Pumping Plant Failure. Many domestic wells produce sand and/or discolored water when the pump is first activated or when they are pumped for an extended time. It is preferable if the well water is allowed to clear, and for the field-measured parameters to stabilize, prior to sampling for the most meaningful results. Therefore, the well may need to be pumped continuously for one-to three hours during our measurements. Except during the summer months, when irrigation use from the well may cause the pump to run continuously, the typical domestic well does not run for this length of time. Domestic well pumps have a finite life and if the well being tested has an old pump or a worn pump, the extra pumping prior to sampling could cause a compromised pump to fail. In that case, the pumping plant would have to be removed from the well and repaired or replaced by the well owner to restore the water supply. Such failures during HLI's measurement, pumping and sampling of the well would not be the responsibility or liability of HLI ~~or Alta Mesa~~.

Risk of Well Failure. Similarly, domestic wells have a finite useful life. A prolonged period of pumping, with a commensurate lowering of water level in an old or poorly constructed well, could cause collapse of open hole wells or wells with corroded casing. This could cause the well to produce sand or become unable to produce water at all. It is possible that the well owner would have to drill and construct a replacement well. Such failures during HLI's measurement, pumping and/or sampling of the well would be the result of pre-existing conditions in the well and would not be the responsibility or liability of HLI ~~or Alta Mesa~~.

Acknowledgement of Risks and Indemnification of Hydro Logic, Inc. and Alta Mesa: By signing below, the well owner listed above acknowledges these risks to his or her domestic well and/or pumping plant due to the pumping, measurement, and/or sampling that HLI will undertake, and hereby agrees to hold HLI ~~and Alta Mesa~~ harmless from any cost, damage, liability, and/or responsibility that would occur to the well and/or pumping plant as a result of any of its on-site activities other than [illegible] HLI's negligence.

Signature of Well C (b) (6) Date: 21 February 2014

Printed Name of Well Owner: (b) (6) Date: 21 February 2014

Thank you for your willingness to participate in our research. The following questions are not required but would be helpful if answered:

Ed Squires

1) Are you the original owner of the well on your property? NO
   a. If not, do you know the name of the original owner? Unknown
   b. If not, who did you buy the property from? (b) (6)
2) Did you have the well drilled? NO
3) Do you know who the name of the drilling company that drilled your well? NO

2

4) Do you have any records of construction and/or maintenance on the well itself? Yes, Casey replaced within last 5 years

5) Do you have any records of pump maintenance and/or replacement? see response to #4 above.

6) Does your well produce sand? If so, how much? no

7) Do you know how deep your well is? unknown

8) Do you know how old your well is? unknown

9) Have you noticed any odors in your water supply? no

10) Have you ever noticed discolored water in your well water? no

11) Have you observed air or bubbles in your well water? no

12) Do you have records of past water levels? no

13) Have you had problems with your well and or pump? none
   a. If so, what was the nature of the problems?
   b. Who is your pump contractor?
   c. To what do you attribute the problems you have experienced?

14) Have you had your well deepened or a screen inserted after the well was drilled? When? no

15) Are you willing to have your well measured and inspected by Hydro Logic, Inc.? yes

Thank you for your responses and assistance in evaluating your well.

Respectfully,
Ed Squires
Hydro Logic, Inc.

Appendix B.

Field Notes, Pumping Test Table, and Field Pumping Test Plot by Kurt Newbry of Hydro Logic, Inc. Recorded During (b) (6) Domestic Well Testing

	CALCULATIONS AND DESIGN DATA	PREPARED BY K. Nawbry	DATE 9/16/2014
SUBJECT Alta Mesa Holdings, (b) (6) Well Site Visit		123 miles River	SHEET 1 OF 3

1031 on site Meet (b) (6), she shows me pressure tank in basement of house and well
1049 Well GPS: N44° 03' 26.8" W116° 48' 06.5" ±15', Elev = 2352'
10:57 NPW = 96.04' btoc, toc = 1.65' agl
11:04 NPW = 95.73' btoc, water level rising, must have pumped recently
11:17 NPW = 95.37' btoc. Try to figure plumbing and find best sample point
11:30 closed valve [illegible] from well and open hard [illegible] system. Hydrant did not flow and house did not
low pressure. I will use front fire hydrant, it is upstream of house / chlorine injection
11:44 NPW = 95.99' btoc   Hydrant GPS: N44° 03' 25.7" W116° 48' 05.4" ±15'
11:57 pump turned on, went to get input before test started and pump tired on while adding [illegible].
11:13 pump turned off, PWL = 101.00' btoc, before [illegible], check plumbing inside, small leak in system [illegible]
12:01 NPWL = 96.32' btoc
12:40 start well test *See Page 2 for constant discharge test
13:40 Done with test prepare to sample.

Time	Pro-Plus #1 Temp.	D.O.	Cond.	pH	ORP	Pro-Plus #2 Temp.	D.O.	Cond.	pH	ORP
13:30	65.4	0.12	753	7.71	-33.5	65.4	0.11	609	7.73	-55.5
13:40	65.5	0.15	754	7.71	-81.6	65.5	0.08	609	7.74	-73.3
13:50	65.5	0.11	753	7.71	-84.1	65.4	0.06	607	7.73	-112.0
13:59	65.6	0.10	751	7.71	-103.3	65.5	0.09	607	7.73	-137.7

} Geochemistry Field Parameters

14:00 Sample Water, Very minor metallic taste, Very minor H_2S odor (have to fill container half way and shake to barely smell it)
No color, no sand, no yellowing with time, minor degassing

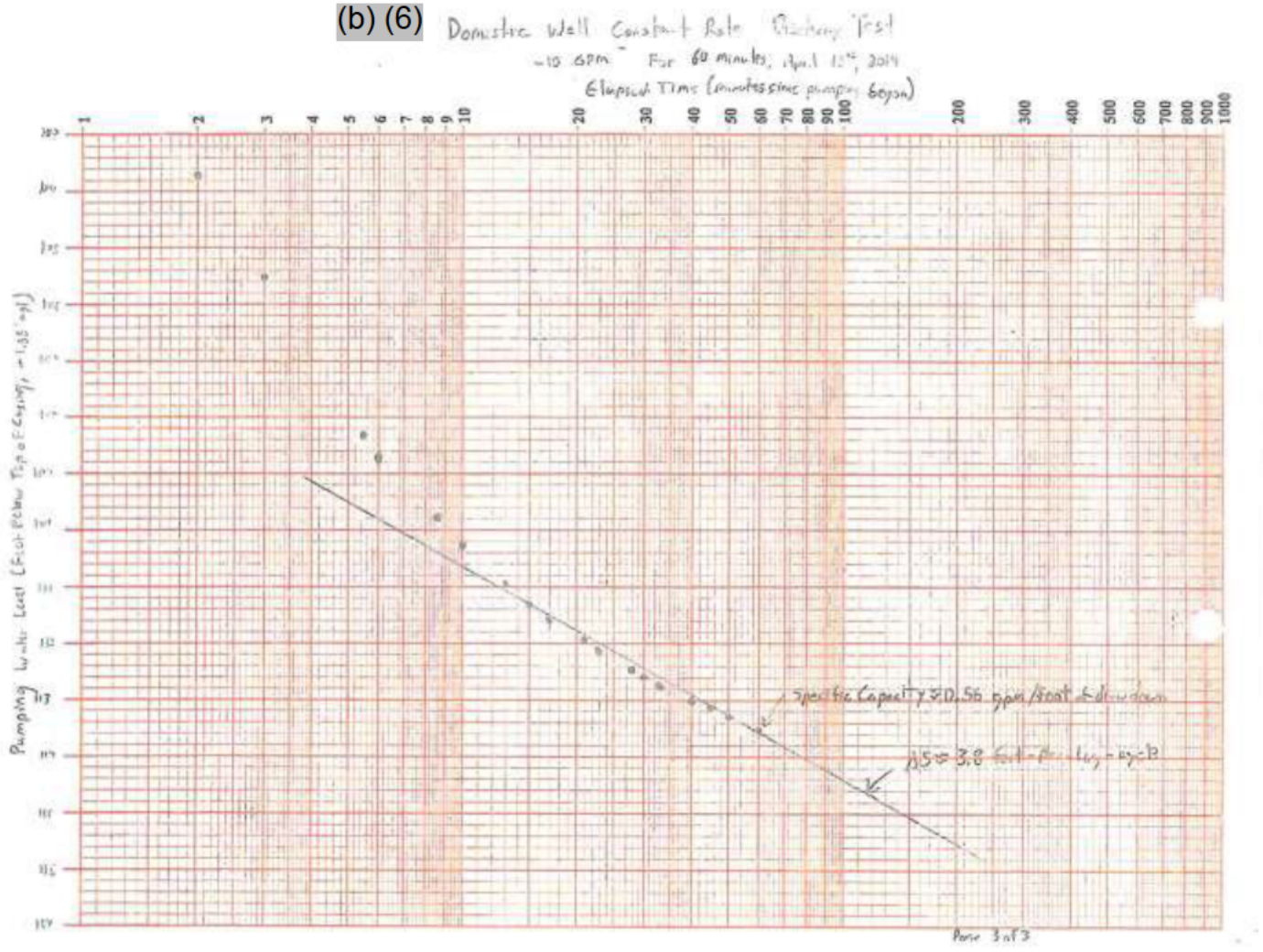
14:10 Done Sampling
14:15 PWL = 113.59' btoc, Water flowing at sample rate, pull sounder up above NPWL
14:15 close valve. load up
14:29 NPWL [illegible] btoc
14:30 offsite

L tion: Alta Mesa / (b) (6)
Who: K. Nauley
Date(s): 4/15/2014

Elapsed Time (minutes)	Time (24 hour)	Water Level (feet below measure point = 1.65 above ground)	~~Orifice Weir Inches~~ Flow (seconds / 5 gallons)	Flow Meter Flow (gallons/minute)	~~Totalizer~~	~~Exact Time Totalizer Taken~~	Comments
	13:03	96.07					
	12:05	95.94					
	12:07	95.82					
0	12:10						open valve all the way
	12:11:25		32	13.6			
2	12:12	103.77					
3	12:13	105.54					
	[illegible]		28.19	10.64			
5.5	12:15:30	108.36					
6	12:16	108.78					
	[illegible]		29.97	10.18			
8.5	[illegible]	109.80					
[illegible]	12:19	110.00					
10	12:20	110.28					
	12:21:40		29.78	10.07			
13	12:23	110.95					
15	12:25	111.30					
17	12:27	111.37					
	[illegible]		29.80	10.06			
21	12:31	111.86					
23	12:33	112.19					
	[illegible]		29.78	10.07			
28	12:38	112.46					
30	12:40	112.59					
33	12:43	112.72					
	12:45:50		30.31	9.90			
40	12:50	113.02					
	12:53		29.72	10.09			
45	12:55	113.17					
50	13:00	113.30					
	13:04		32.??	9.90			
60	13:10	113.53					End of test
	13:13		29.55	10.05			Emptying flow cell for field parameters [illegible] flow [illegible]

Page 2 of 3

(b) (6)


Domestic Well Constant Rate Discharge Test
~10 GPM For 60 minutes, April 12th, 2014
Elapsed Time (minutes since pumping began)
1
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
90
100
200
300
400
500
600
700
800
900
1000
Pumping Water Level (Feet Below Top of Casing, ~1.35' agl)
Specific Capacity = 10.56 gpm/foot of drawdown
Page 3 of 3

Appendix C.

Geochemistry Results from Analytical Laboratories, Inc. for (b) (6) Domestic Well and Hydro Logic, Inc. Water Quality Analyses Request Forms

Hydro Logic, Inc.
1002 W. Franklin Street, Boise, ID 83702 (208) 342-8369, Fax (208) 342-3100, hli@hydrologicinc.net

WATER QUALITY ANALYSES REQUEST FORM

RESULTS TO: Hydro Logic, Inc.
ATTENTION: Ed Squires
SAMPLE SOURCE: (b) (6) Well
TIME (24-hour clock): 1400
DATE COLLECTED: 4/16/2014
COMPLIANCE SAMPLES (yes or no) No

PROJECT/JOB: Alta Mesa Holdings
BILL TO: Hydro Logic, Inc.
1002 W. Franklin St.
Boise, ID 83702

SUBMITTED BY: Kurt Newby

STANDARD TESTS REQUESTED *(please check analytes to be tested)*:

Acute IOC Contaminants:

- ✓ nitrate (as N)
- ___ nitrite (as N)
- ✓ sulfate

Primary IOC Contaminants:

- ✓ fluoride
- ✓ sodium

Secondary & Other IOC Contaminants:

- ✓ alkalinity
- ___ ammonia (as N)
- ✓ calcium (as $CaCO_3$)
- ✓ chloride
- ___ conductivity
- ___ corrosivity
- ___ hardness
- ___ sulfide
- ✓ iron (total)
- ✓ magnesium
- ✓ manganese (diss.)
- ✓ potassium
- ✓ silica
- ✓ total diss. solids

OPTIONAL TESTS REQUESTED *(please check analytes to be tested)*

- ✓ aluminum
- ___ antimony
- ✓ arsenic
- ___ bacteria (total coliform)
- ✓ barium
- ___ beryllium
- ___ cadmium
- ___ chromium
- ___ chlorine demand
- ___ color
- ___ copper
- ___ cyanide
- ✓ gross α and β
- ✓ iron (dissolved)
- ___ Kjehldahl nitrogen (total)
- ___ lead
- ___ mercury
- ___ nickel
- ___ odor
- ___ organic carbon (total)
- ___ orthophosphate
- ___ pH
- ___ radium 226
- ___ radium 228
- ___ radon 222
- ✓ selenium
- silver
- ___ surfactants
- ___ suspended solids
- ___ thallium
- ✓ uranium
- ___ zinc
- ✓ boron

SOC's

- ___ carbamates (531.1)
- ___ dalapon (515.4)
- ___ diquat (549.1)
- ___ EDB/DBCP (504.1)
- ___ endothall (548.1)
- ___ glyphosate (547)
- ___ herbicides (515.4)
- ___ pesticides/PCBS (508)
- ___ semivolatiles (525.2)
- ✓ VOC's (524.2)

✓ methane (also carbon isotopic composition for samples with sufficient methane)

FIELD WATER QUALITY PARAMETERS *(must be completed prior to submitting samples)*

Parameter Set No. 1			Meter #	Parameter Set No. 2			Meter #	Physical Descriptions
Field Conductivity	= 754	µS	Pro Plus #1	Field Conductivity	= 607	µS	Pro Plus #2	Odor (describe) Very minor H_2S
Field Dissolved Oxygen	= 0.10	mg/L		Field Dissolved Oxygen	= 0.09	mg/L		Taste (describe) Very minor metallic
Field pH	= 7.71	SU		Field pH	= 7.73	SU		Sand Production (yes or no) No
Field ORP	= -100.6	mV		Field ORP	= -134.7	mV		Visible Gas (describe) minor degassing
Field Temperature	= 65.6	°F		Field Temperature	= 65.5	°F		

CLIENT CODE: HYDLOG

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION:
Project Manager: Ed Squires
Company: Hydro Logic, Inc.
Address: 1002 W. Franklin St.
208-[illegible]-9175
Phone: (208) 342-8364 Fax: (208) 342-3100
Sampled by: (Please print) K. Newby

PROJECT INFORMATION:
Project Name: Alta Mesa Holdings
PWS Number:
Purchase Order Number:
Required Due Date:
E-mail Address: Ed@hydrologicinc.net
Transported by: (Please print)

ANALYTICAL LABS, INC.
1804 N. 33rd Street • Boise, ID 83703
(208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773
Website: www.analyticallaboratories.com
E-mail: all@analyticallaboratories.com

Lab ID	Date Sampled	Time Sampled	Sample Description (Source)	Sample Matrix	TESTS REQUESTED	Remarks:
13442 - 13445	4/16/14	14:00	(b) (6) Well	D.W. 16	* See Attached *	

Invoice to: (If different than above address)

Special Instructions: Dissolved - Field vw-filtered

ALLOCATIONS OF RISK: Analytical Laboratories, Inc. will perform preparation and testing services, obtain findings and prepare reports in accordance with Good Laboratory Practices (GLP). If, for any reason, Analytical Laboratories, Inc. errors in the conduct of a test or procedure, their liability shall be limited to the cost of the test or procedure completed in error. Under no circumstances will Analytical Laboratories, Inc. be liable for any other cost associated with obtaining a sample or use of data.

Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.

	Print Name:	Company:	Date:	Time:
Relinquished By: (Signature)	Kurt Newby	Hydro Logic, Inc.	4/16/14	15:55
Received By: (Signature)				
Relinquished By: (Signature)				
Received By: (Signature) Brenda Wright	Brenda Wright	ALI	4-16-14	15:55

SAMPLE RECEIPT Total # of Containers: Chains of Custody Seals: Y / N / (NA) Intact: Y / N / (NA) Temperature Received: 20.1°C Condition: good

Rev. 2/19/13 WHITE: STAYS WITH SAMPLE (S) YELLOW: LAB PINK: SAMPLER

H

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Attn: ED SQUIRES
HYDRO LOGIC INC
1002 W FRANKLIN ST
BOISE, ID 83702

Collected By: K NEWBRY
Submitted By: K NEWBRY

Source of Sample:
ALTA MESA HOLDINGS (b) (6) WELL

Time of Collection: 14:00
Date of Collection: 4/16/2014
Date Received: 4/16/2014
Report Date: 4/24/2014

Field Temp: 18.7 °C **Temp Rcvd in Lab:** 20.1 °C
PWS: **PWS Name**

Laboratory Analysis Report

Sample Number: 1413443

FIELD TEMP=65.6*F/18.7*C; FIELD COND=754; FIELD DO=0.10; FIELD PH=7.71; FIELD ORP=-100.6; Methane, Ethane, and Ethene testing were performed by Accutest Mountain States (AMS).

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Sodium, Na	UR	46.0	mg/L	0.50	EPA 200.7	4/18/2014	KC
Potassium, K	UR	8.5	mg/L	0.5	EPA 200.7	4/18/2014	KC
Calcium, Ca	UR	43.6	mg/L	0.50	EPA 200.7	4/18/2014	KC
Silica	UR	69.2	mg/L	0.25	EPA 200.7	4/22/2014	KC
Iron, Fe	UR	0.08	mg/L	0.05	EPA 200.7	4/17/2014	KC
Aluminum, Al	UR	< 0.10	mg/L	0.10	EPA 200.7	4/17/2014	KC
Selenium Low	0.05	< 0.005	mg/L	0.005	EPA 200.8	4/21/2014	JH
Uranium, U	30	< 1	ug/L	1	EPA 200.8	4/18/2014	JH
Arsenic Low	0.01	< 0.003	mg/L	0.003	EPA 200.8	4/18/2014	JH
Boron, B		< 0.10	mg/L	0.10	EPA 200.7	4/22/2014	KC
Barium, Ba	2	0.11	mg/L	0.05	EPA 200.7	4/17/2014	KC
Magnesium, Mg	UR	26.5	mg/L	0.50	EPA 200.7	4/18/2014	KC
Nitrate (as N)	10	< 0.2	mg/L	0.2	EPA 300.0	4/17/2014	NC
Benzene	5	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Carbon tetrachloride	5	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Chlorobenzene	100	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
1,2-Dichlorobenzene	600	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Date Report Printed: 4/24/2014 10:10:11

Laboratory Analysis Report

Sample Number: 1413443

FIELD TEMP=65.6°F/18.7°C; FIELD COND=754; FIELD DO=0.10; FIELD PH=7.71; FIELD ORP=-100.6; Methane, Ethane, and Ethene testing were performed by Accutest Mountain States (AMS).

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
1,4-Dichlorobenzene	75	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
1,2-Dichloroethane	5	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
1,1-Dichloroethene	7	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
cis-1,2-Dichloroethene	70	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
trans-1,2-Dichloroethene	100	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
1,2-Dichloropropene	5	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Ethylbenzene	700	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Dichloromethane	5	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Styrene	100	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Tetrachloroethene	5	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Toluene	1000	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
1,2,4-Trichlorobenzene	70	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
1,1,1-Trichloroethane	200	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
1,1,2-Trichloroethane	200	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Trichloroethene	5	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Vinyl chloride	2	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Xylene, Total	10000	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Methyl-tert-butylether	UR	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Bromodichloromethane	----	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Bromoform	----	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Chloroform	----	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Dibromochloromethane	----	<0.5	ug/L	0.5	EPA 524.2	4/21/2014	CY
Total THM's	80	<2.0	ug/L	2	EPA 524.2	4/21/2014	CY
Dibromofluoromethane (Surr)		98.2	% 70-130		EPA 524.2	4/21/2014	CY
Toluene-d5 Surrogate		91.8	% 70-130		EPA 524.2	4/21/2014	CY
Bromofluorobenzene Surrogate		90.0	% 70-130		EPA 524.2	4/21/2014	CY
Methane		0.0041	mg/L	0.0004	RSKSOP 175	4/21/2014	AMS
Ethane		<0.00080	mg/L	0.0008	RSKSOP 175	4/21/2014	AMS
Ethene		<0.0012	mg/L	0.0012	RSKSOP 175	4/21/2014	AMS
Fluoride, F	4.0	0.28	mg/L	0.10	EPA 300.0	4/17/2014	NC
Alkalinity	UR	280	mg/L CaCO3		EPA 310.1	4/18/2014	CJS

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Date Report Printed: 4/24/2014 10:10:11

Laboratory Analysis Report

Sample Number: 1413443

FIELD TEMP=65.6*F/18.7*C; FIELD COND=754; FIELD DO=0.10; FIELD PH=7.71; FIELD ORP=-100.6; Methane, Ethane, and Ethene testing were performed by Accutest Mountain States (AMS).

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Sulfate, SO4	UR	74	mg/L	1	EPA 300.0	4/17/2014	NC
Chloride, Cl	UR	10	mg/L	1	EPA 300.0	4/17/2014	NC
Total Dissolved Solids	UR	364	mg/L	25	SM 2540C	4/17/2014	DP

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions concerning this report,
please contact your client manager: James Hibbs

Page 3 of 3

Date Report Printed: 4/24/2014 10:10:11

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Date Report Printed: 4/21/2014 8:41:35
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 1413444

Attn: ED SQUIRES
HYDRO LOGIC INC
1002 W FRANKLIN ST
BOISE, ID 83702

Collected By: K NEWBRY
Submitted By: K NEWBRY

Source of Sample:
ALTA MESA HOLDINGS (b) (6) WELL (AS DISSOLVED)

Time of Collection: 14:00
Date of Collection: 4/16/2014
Date Received: 4/16/2014
Report Date: 4/21/2014

PWS#:
PWS Name:

Field Temp: 18.7 °C Temp Rcvd in Lab: 20.1 °C

RCVD NON-FILTERED; FIELD TEMP=65.6*F/18.7*C; FIELD COND=754; FIELD DO=0.10; FIELD PH=7.71; FIELD ORP=-100.6

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Iron, Fe	UR	0.07	mg/L	0.05	EPA 200.7	4/17/2014	KC
Manganese, Mn	UR	0.05	mg/L	0.05	EPA 200.7	4/17/2014	KC
Metals Filtering		*				4/17/2014	JMS

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions about this report, or any future analytical needs, please contact your client manager.
James Hibbs

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Date Report Printed: 5/2/2014 8:34:45
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 1413445

Attn: ED SQUIRES
HYDRO LOGIC INC
1002 W FRANKLIN ST
BOISE, ID 83702

Collected By: K NEWBRY
Submitted By: K NEWBRY

Source of Sample:
ALTA MESA HOLDINGS (b) (6) WELL

Time of Collection: 14:00
Date of Collection: 4/16/2014
Date Received: 4/16/2014
Report Date: 5/2/2014

PWS#:
PWS Name:

Field Temp: 18.7 °C Temp Rcvd in Lab: 20.1 °C

FIELD TEMP=65.6°F/18.7°C; FIELD COND=754; FIELD DO=0.10; FIELD PH=7.71; FIELD ORP=-100.6; Radiological testing was performed by Summit Enviornmental (SUM).

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Gross Alpha	15 pCi	<3	pCi/L	3	EPA 900.0	5/1/2014	SUM
Gross Beta		7.3+/-3.3	pCi/L	4	EPA 900.0	5/1/2014	SUM

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions about this report, or any future analytical needs, please contact your client manager.
James Hibbs

SAMPLE TYPE CODE
S - Routine Sample
P - Repeat sample (at original tap)
E - Enforcement (chain of custody)
U - Upstream repeat
D - Downstream repeat
X -Other Repeat
W - Untreated
V - Invalidated by Lab
C - Construction / Special

ANALYTICAL LABORATORIES, INC.

ID00020
1804 N. 33rd Street
Boise, Idaho 83703
1-800-574-5773
1-208-342-5515
www.analyticallaboratories.com

Public Water Supply X Private Water Supply Other_____

NAME OF WATER SYSTEM	COUNTY	PWS

REPORT RESULTS TO:

ED SQUIRES
HYDRO LOGIC INC
1002 W FRANKLIN ST
BOISE, ID 83702

DATE RECEIVED	4/16/2014
TIME RECEIVED	15:55
DATE ANALYZED	4/16/2014
TIME ANALYZED	17:00

SEND ADDITIONAL COPIES TO:

e-mail:

IF RETEST, ORIGINAL SAMPLE DATE:

Phone (208) 342-8369 Ext Fax (208) 342-4334

CHILLED 10 C [X] YES [ ] NO

COLLECTED BY: K NEWBRY

TRANSPORTED BY: K NEWBRY

SAMPLE TYPE	COLLECTION DATE/TIME	Sampling Location	Cl res	TOTAL COLIFORMS SM 9223	*E. COLI* SM 9223	HPC SM 9215
C	4/16/2014 14:00	LAB# 1413442 ALTA MESA HOLDINGS (b) (6) WELL		ABSENCE	ABSENCE	

REMARKS: FIELD TEMP=65.6°F/18.7°C; FIELD COND=754; FIELD DO=0.10; FIELD PH=7.71; FIELD ORP=-100.6

ANALYST: LM
DATE PRINTED: 4/17/2014

ANALYTICAL METHODS

Total Coliforms

SM 9222 Membrane Filter Technique, Parts 909 and 908A, Standard Methods....16th ed.,1985

SM 9221 Multiple Tube Fermentation , Parts 908 and 908A, and 908B, Standard Methods....16th

SM 9223 IMMO-MUG Test Per 40 CFR141.21(f)(3)(IV)

E. coli

MUG Test Per 141.214(a)(7) and 40 CFR 141.21(f)(6)(iii)

HPC

Pour Plate, Part 907, Standard Methods..., 16th ed., 1

Records shall be retained and destroyed in accordance with IDAPA 58.01.08 and 40 CFR 141.33. In general, records shall not be retained beyond prescribed retention times.

Analytical Laboratories, Inc.

4-17-14

Brian McGovern Date
Laboratory Supervisor

Appendix D.

State of Idaho Well Driller's Report for (b) (6) Domestic Well